

THE UNITED STATES OF AMERICA

TO ALL TO WHOM THESE PRESENTS SHALL COME:

Lofts Pedigreed Seed, Inc.

Whereas, THERE HAS BEEN PRESENTED TO THE
Secretary of Agriculture

AN APPLICATION REQUESTING A CERTIFICATE OF PROTECTION FOR AN ALLEGED NOVEL VARIETY OF SEXUALLY REPRODUCED PLANT, THE NAME AND DESCRIPTION OF WHICH ARE CONTAINED IN THE APPLICATION AND EXHIBITS, A COPY OF WHICH IS HEREUNTO ANNEXED AND MADE A PART HEREOF, AND THE VARIOUS REQUIREMENTS OF LAW IN SUCH CASES MADE AND PROVIDED HAVE BEEN COMPLIED WITH, AND THE TITLE THERETO IS, FROM THE RECORDS OF THE PLANT VARIETY PROTECTION OFFICE, IN THE APPLICANT(S) INDICATED IN THE SAID COPY, AND WHEREAS, UPON DUE EXAMINATION MADE, THE SAID APPLICANT(S) IS (ARE) ADJUDGED TO BE ENTITLED TO A CERTIFICATE OF PLANT VARIETY PROTECTION UNDER THE LAW.

NOW, THEREFORE, THIS CERTIFICATE OF PLANT VARIETY PROTECTION IS TO GRANT UNTO THE SAID APPLICANT(S) AND THE SUCCESSORS, HEIRS OR ASSIGNS OF THE SAID APPLICANT(S) FOR THE TERM OF *eighteen* YEARS FROM THE DATE OF THIS GRANT, SUBJECT TO THE PAYMENT OF THE REQUIRED FEES AND PERIODIC REPLENISHMENT OF VIABLE BASIC SEED OF THE VARIETY IN A PUBLIC REPOSITORY AS PROVIDED BY LAW, THE RIGHT TO EXCLUDE OTHERS FROM SELLING THE VARIETY, OR OFFERING IT FOR SALE, OR REPRODUCING IT, OR IMPORTING IT, OR EXPORTING IT, OR USING IT IN PRODUCING A HYBRID OR DIFFERENT VARIETY THEREFROM, TO THE EXTENT PROVIDED BY THE PLANT VARIETY PROTECTION ACT OF MAY 30, 1930 (45 Stat. 1542, AS AMENDED, 7 U.S.C. 2321 ET SEQ.)

TALL FESCUE

'Rebel'



In Testimony Whereof, I have hereunto set my hand and caused the seal of the Plant Variety Protection Office to be affixed at the City of Washington this 14th day of May in the year of our Lord one thousand nine hundred and eighty-one.

Attest:

Samuel H. Lee

Commissioner
Plant Variety Protection Office
Grain Division
Agricultural Marketing Service

John R. Block
Secretary of Agriculture

UNITED STATES DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE
LIVESTOCK, POULTRY, GRAIN & SEED DIVISION

FORM APPROVED
OMB NO. 40-R3822

APPLICATION FOR PLANT VARIETY PROTECTION CERTIFICATE

INSTRUCTIONS: See Reverse.

No certificate for plant variety protection may be issued unless a completed application form has been received (5 U.S.C. 553).

1a. TEMPORARY DESIGNATION OF VARIETY		1b. VARIETY NAME		FOR OFFICIAL USE ONLY	
Lofts T-5.6		Rebel		PV NUMBER 8000153	
2. KIND NAME		3. GENUS AND SPECIES NAME		FILING DATE	TIME
Tall Fescue		Festuca arundinacea Schreb		8/21/80	8:30 A.M.
4. FAMILY NAME (BOTANICAL)		5. DATE OF DETERMINATION		FEE RECEIVED	DATE
Gramineae		July 30, 1977		\$ 500.00	8/21/80
				\$ 250.00	3/27/81
6. NAME OF APPLICANT(S)		7. ADDRESS (Street and No. or R.F.D. No., City, State, and ZIP Code)		8. TELEPHONE AREA CODE AND NUMBER	
Lofts Pedigreed Seed, Inc.		Chimney Rock Road P. O. Box 146, Bound Brook, NJ 08805		(201) 356-8700	
9. IF THE NAMED APPLICANT IS NOT A PERSON, FORM OF ORGANIZATION: (Corporation, partnership, association, etc.)		10. IF INCORPORATED, GIVE STATE AND DATE OF INCORPORATION		11. DATE OF INCORPORATION	
Corporation		New Jersey		11/10/48	
12. NAME AND MAILING ADDRESS OF APPLICANT REPRESENTATIVE(S), IF ANY, TO SERVE IN THIS APPLICATION AND RECEIVE ALL PAPERS:					
Mr. Richard H. Hurley, Lofts Pedigreed Seed, Inc. POBox 146, Bound Brook, New Jersey 08805 Telephone:(201) 356-8700					

13. CHECK BOX BELOW FOR EACH ATTACHMENT SUBMITTED:

- ☒ 13A. Exhibit A, Origin and Breeding History of the Variety (See Section 52 of the Plant Variety Protection Act.)
- ☒ 13B. Exhibit B, Novelty Statement.
- ☒ 13C. Exhibit C, Objective Description of the Variety (Request form from Plant Variety Protection Office.)
- ☒ 13D. Exhibit D, Additional Description of the Variety.

14a. DOES THE APPLICANT(S) SPECIFY THAT SEED OF THIS VARIETY BE SOLD BY VARIETY NAME ONLY AS A CLASS OF CERTIFIED SEED? (See Section 83(a). (If "Yes," answer 14B and 14C below.) ☐ YES ☒ NO

14b. DOES THE APPLICANT(S) SPECIFY THAT THIS VARIETY BE LIMITED AS TO NUMBER OF GENERATIONS? ☒ YES ☐ NO

14c. IF "YES," TO 14B, HOW MANY GENERATIONS OF PRODUCTION BEYOND BREEDER SEED? ☒ FOUNDATION ☐ REGISTERED ☒ CERTIFIED

15a. DID THE APPLICANT(S) FILE FOR PROTECTION OF THIS VARIETY IN OTHER COUNTRIES? ☐ YES ☒ NO (If "Yes," give name of countries and dates.)

15b. HAVE RIGHTS BEEN GRANTED THIS VARIETY IN OTHER COUNTRIES? ☐ YES ☒ NO (If "Yes," give name of countries and dates.)

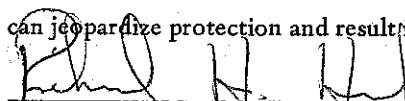
16. DOES THE APPLICANT(S) AGREE TO THE PUBLICATION OF HIS/HER (THEIR) NAME(S) AND ADDRESS IN THE OFFICIAL JOURNAL? ☒ YES ☐ NO

17. The applicant(s) declare(s) that a viable sample of basic seed of this variety will be furnished with the application and will be replenished upon request in accordance with such regulations as may be applicable.

The undersigned applicant(s) is (are) the owner(s) of this sexually reproduced novel plant variety, and believe(s) that the variety is distinct, uniform, and stable as required in Section 41, and is entitled to protection under the provisions of Section 42 of the Plant Variety Act.

Applicant(s) is (are) informed that false representation herein can jeopardize protection and result in penalties.

Aug. 18, 1980
(DATE)


(SIGNATURE OF APPLICANT)

(DATE)

(SIGNATURE OF APPLICANT)

INSTRUCTIONS

GENERAL: Send an original copy of the application and exhibits, at least 2,500 viable seeds, and \$500 fee (\$250 filing fee and \$250 examination fee) to U.S. Dept. of Agriculture, Agricultural Marketing Service, Livestock, Poultry, Grain and Seed Division, Plant Variety Protection Office, National Agricultural Library Building, Beltsville, Maryland 20705. (See section 180.175 of the Regulations and Rules of Practice.) Retain one copy for your files. All items on the face of the form are self-explanatory unless noted below.

ITEM

- 5 Give the date the applicant determined that he had a new variety based on (1) the definition in section 41(a) of the Act and (2) the date a decision was made to increase the seed.
- 13a Give: (1) the genealogy, including public and commercial varieties, lines, or clones used, and the breeding method; (2) the details of subsequent stages of selection and multiplication; (3) the type and frequency of variants during reproduction and multiplication and state how these variants may be identified and (4) evidence of uniformity and stability.
- 13b Give a summary statement of the variety's novelty. Clearly state how this novel variety may be distinguished from all other varieties in the same crop. If the new variety most closely resembles one or a group of related varieties: (1) identify these varieties and state all differences objectively; (2) attach statistical data for characters expressed numerically and demonstrate that these differences are significant; and (3) submit, if helpful, seed and plant specimens or photographs of seed and plant comparisons clearly indicating novelty.
- 13c Fill in the Exhibit C, Objective Description form, for all characteristics for which you have adequate data.
- 13d Describe any additional characteristics that are not described, or whose description cannot be accurately conveyed in Exhibit C. Use comparative varieties as is necessary to reveal more accurately the description of characteristics that are difficult to describe, such as, plant habit, plant color, disease resistance, etc.
- 14a If "YES" is specified (seed of this variety be sold by variety name only as a class of certified seed) the applicant may NOT reverse his affirmative decision after the variety has either been sold and so labeled, his decision published, or the certificate has been issued. However, if the applicant specified "NO," he may change his choice. (See section 180.16 of the Regulations and Rules of Practice.)
- 15a See section 42 of the Plant Variety Protection Act and section 180.7 of the Regulations and Rules of Practice.

EXHIBIT AOrigin and Breeding History of Rebel Tall Fescue

1. A program was initiated in the fall of 1961 to collect and evaluate germplasm useful for developing an improved turf-type tall fescue. Plant collections were made from old lawns, pastures and other turf areas throughout New Jersey, Pennsylvania, New York, Connecticut, Delaware, Maryland, Virginia, West Virginia, and Washington, D. C. Promising accessions were obtained from the United States Plant Introduction Program. Trispecies hybrids of tall fescue (Festuca arundinacea Schreb.), meadow fescue (F. pratensis Huds.) and perennial ryegrass (Lolium perenne L.) were obtained from the United States Regional Pasture Research Laboratory, University Park, Pennsylvania. The most promising selections were evaluated by establishing them in spaced-plant clonal nurseries which were later interseeded with Linn perennial ryegrass and maintained at a 5-cm mowing height. Tillers from selected clones were then grown in isolated spaced-plant seed production nurseries. Open-pollinated seed was harvested from selected plants and used to establish 130 single plant progeny plots maintained at a 2-cm mowing height. The first cycle seeded turf trials were planted at New Brunswick, New Jersey in September 1964. Plots of all standard varieties and most progenies were severely thinned by the stress of frequent close mowing. Surviving tillers were selected from the best plots and used to establish a second isolated spaced-plant seed production nursery in August 1968. A substantial percentage of the tillers selected at

this time came from the open-pollinated seed of clone FA2R collected from the campus lawn of Princeton University and from Clone CM8 collected from a lawn in Cape May, New Jersey. Open-pollinated seed was harvested from selected plants and used to establish 330 second cycle single plant progeny turf plots during September 1969 and August 1970. These second cycle turf trials were maintained at a 2-cm mowing height which again resulted in severe thinning of all standard varieties and most progenies. Tillers were selected from the best plots during August 1972 and established in an isolated spaced-plant seed production nursery. This nursery was rouged to remove unattractive plants prior to anthesis. Open pollinated seed was harvested from selected plants and used to establish nearly 1000 third cycle single plant progeny plots at Adelphia, New Jersey, during September 1973. These third cycle turf trials were mowed at 2-cm with all standard varieties showing severe thinning. However, a substantial percentage of the single plant progeny plots continue to produce a full stand of attractive turf as of this date (August 1980).

2. Tillers were selected from the best third cycle progeny plots during August 1974 and planted in an isolated nursery. Unattractive plants were rouged from this nursery prior to anthesis. Approximately 50 pounds of Breeders seed of Rebel tall fescue was harvested from this nursery in early July of 1975, and distributed for turf plot trials and seed production tests. A second harvest of

about 100 pounds of Breeders Seed was harvested from a similar nursery during July of 1978. This seed was used to establish more extensive turf trials in both North America and Europe and to plant a foundation seed increase field in Oregon. Seed propagation of Rebel is limited to two generations of increase from breeder seed -- one each of foundation and certified.

3. No objectionable off-type plants or variants have been observed in the reproduction or multiplication of Rebel tall fescue.

4. Breeder seed harvested in both 1975 and 1978 and foundation seed harvested in 1979 have all produced turf of comparable quality and acceptable uniformity.

EXHIBIT BNovelty Statement on Rebel Tall Fescue

Rebel tall fescue is a moderately dark green, turf-type cultivar capable of producing a leafy, persistent turf of greater density, finer texture and a slower rate of vertical growth than the standard commercially available cultivars of tall fescue such as Kentucky 31, Alta and Fawn. Rebel has shown good performance in turf trials in New Jersey (Tables 1, 2, 3 and 4). Rebel showed significantly higher turf performance scores than Kentucky 31, Monaco, Kenwell, Kenhy, Kenmont, Alta, Fawn and Goar.

In a closely mowed turf trial at North Brunswick, New Jersey (Table 1), Rebel produced significantly more tillers per unit area than Kenhy, Kenwell or Kentucky 31. The leaves of Rebel were also significantly finer than those of the above cultivars. Rebel also produced finer leaves and a denser turf than Kentucky 31, Fawn, Kenmont, Goar, Kenhy, Kenwell or Alta in a turf trial at Adelphia, New Jersey (Table 7). Rebel showed moderate resistance to the large brown patch disease incited by Rhizoctonia solani in a turf trial at Adelphia, New Jersey (Table 6). Rebel showed significantly less damage than Kenmont, Kenwell, Fawn, Monaco, Kenhy, Goar or Alta. Rebel showed moderate resistance to the Helminthosporium blight (netblotch) disease incited by Helminthosporium dictyoides in a turf trial at Adelphia, New Jersey (Table 5). Rebel showed significantly less disease damage than Kentucky

31 or Goar. Rebel is a rather late maturing cultivar being significantly later in heading than Alta, Fawn, Kentucky 31, or Falcon (N.J.-78) (Table 14).

Rebel most closely resembles Falcon (N.J.-78) Tall Fescue. However, close comparisons show that the cultivars differ in a number of characteristics as follows:

1. Rebel is significantly later in maturity (Table 14).
2. Rebel normally produces a slightly denser, more compact turf. (Table 7).
3. Falcon (N.J.-78) produces more panicles per unit area (Table 13).

In comparison with Kentucky 31, Rebel shows a number of differences including:

1. Rebel has shown better turf performance in New Jersey (Tables 1, 2, 3 and 4).
2. Rebel has shown better resistance to Helminthosporium dictyoides (Table 5).
3. Rebel can produce a finer, denser turf (Tables 1 and 7).
4. Rebel has a shorter flag leaf (Table 10).
5. Rebel has shorter awns (Table 12).
6. Rebel is later in maturity (Table 14).

Table 5. Reaction of tall fescue cultivars and selections to the *Helminthosporium* blight (netblotch) disease in turf trials at Adelphia, New Jersey, during November 1979.*

Cultivar or selection	Disease** rating 9 = most damage
1. AG-125A	2.9
2. Falcon(N.J.-78)	3.6
3. AG-125	3.6
4. Rebel	4.8
5. Kenhy	4.9
6. K5-27	5.1
7. Kenmont	5.4
8. LFA SYN I	5.7
9. Kenwell	5.8
10. Belt. Syn 16-1	6.3
11. Kentucky 31	6.4
12. Belt. TF 11	6.5
13. Ky Blend	6.8
14. Belt. TF 25	6.9
15. Belt. KPH-1	7.3
16. Goar	8.3
LSD (0.05)	0.9

*Plots seeded September 1979 and mowed at 4-cm.

**Disease incited by *Helminthosporium dictyoides*.

Table 6. Reaction of tall fescue cultivars and selections to the large brown patch disease* in turf trials seeded September 1978 at Adelphia, New Jersey.

Cultivar or selection	Percent of plot damaged by disease
1. Rebel	24
2. Falcon(N.J.-78)	27
3. K5-27	27
4. Ky. blend	27
5. PHB-1-5	29
6. LFA-SYN-I	30
7. Missouri V-11	31
8. Kentucky 31	33
9. AG-125	37
10. Belt. K PH 1	38
11. Kenmont	39
12. Kenwell	40
13. Belt. Syn 16-1	41
14. Fawn	45
15. Monaco	46
16. Kenhy	47
17. Goar	48
18. Belt. TF-11	49
19. Belt. TF-25	49
20. Alta	53
LSD (0.05)	10

Test mowed at 2-cm, and maintained at moderately high fertility.

*Brown patch disease incited by Rhizoctonia solani.

Table 12. Awn length measurements of tall fescue cultivars grown in seed yield trials near Hubbard, Oregon.

Cultivar	Awn length July 1980 mm	Standard error of means
1. Fawn	1.97	0.21
2. Alta	1.83	0.17
3. Kentucky 31	1.62	0.21
4. Falcon (N.J.-78)	1.46	0.13
5. Rebel	1.35	0.13

Table 13. Panicle counts of tall fescue cultivars grown in seed yield trials near Hubbard, Oregon.

Cultivar	No. of panicles per 5 1/2 inch of row July 1980	Standard error of means
1. Fawn	43.5	2.17
2. Alta	42.3	1.24
3. Falcon (N.J.-78)	37.8	1.45
4. Kentucky 31	26.0	6.00
5. Rebel	25.8	1.54

Table 14. Heading dates of tall fescue cultivars grown in seed yield trials near Hubbard, Oregon.

Cultivar	Date of 50% heading 1980
1. Alta	April 30
2. Fawn	May 1
3. Kentucky 31	May 5
4. Falcon (N.J.-78)	May 7
5. Rebel	May 14

U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE
GRAIN DIVISION
HYATTSVILLE, MARYLAND 20782
OBJECTIVE DESCRIPTION OF VARIETY
FESCUE
(*Festuca* spp.)

NAME OF APPLICANT(S) <u>LOFTS PEDIGREED SEED, INC.</u> ADDRESS (Street and No., or R.F.D. No., City, State, and ZIP Code) <u>Chimney Rock Road, P. O. Box 146,</u> <u>Bound Brook, New Jersey 08805</u>	VARIETY NAME OR TEMPORARY DESIGNATION <u>REBEL TALL FESCUE</u> FOR OFFICIAL USE ONLY PVPO NUMBER <u>8000153</u>
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Place the appropriate number that describes the varietal character of this variety in the boxes below. Place a zero in first box (e.g. 089 or 09) when number is either 99 or less or 9 or less. Characteristics described, including numerical measurements, should represent those that are typical for the variety. Ranges may be given also. Measured data should be for SPACED PLANTS. Royal Horticultural Society or any recognized color fan may be used to determine plant colors; designate system used: _____ Describe location of test area Central New Jersey

All questions need not be answered, however, completeness should be striven for in order to establish the most adequate Variety Identification.

1. SPECIES: (With comparison varieties for use below - use varieties within species of application variety)

- | | | | | | |
|----------|--|--------------|---------------------|----------------|------------------|
| <u>1</u> | 1 = <u>F. ARUNDINACEA</u> (TALL) | 11 = ALTA | 12 = FAWN | 13 = GOAR | 14 = KENTUCKY 31 |
| | 2 = <u>F. PRATENSIS</u> (MEADOW) | 21 = ENSIGN | 22 = TRADER | | |
| | 3 = <u>F. RUBRA</u> SSP. <u>COMMUTATA</u> (CHEWINGS) | 31 = CASCADE | 32 = HIGHLIGHT | 33 = JAMESTOWN | |
| | 4 = <u>F. RUBRA</u> SSP. <u>RUBRA</u> (RED) | 41 = BOREAL | 42 = PENNLAWN | 43 = DAWSON | |
| | 5 = <u>F. OVINA</u> VAR. <u>OVINA</u> (SHEEP) | | | | |
| | 6 = <u>F. LONGIFOLIA</u> (HARD) | 61 = DURAR | 62 = BILJART (C-26) | 63 = SCALDIS | |
| | 7 = OTHER (SPECIFY) <u>F. _____</u> | | | | |

2. CYTOLOGY

<u>4</u>	<u>2</u>
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 2n CHROMOSOME NUMBER

3. ADAPTATION: (0 = Not Tested; 1 = Not Adapted; 2 = Adapted)

<u>2</u> Southern part NORTHEAST	<u>2</u> Higher elevation SOUTHEAST	<u>2</u> Southern part NORTH CENTRAL	<u>2</u> PACIFIC N.W.	<u>2</u> OTHER (SPECIFY) <u>California</u>
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4. MATURITY: (50% Headed) Give Test Area Hubbard, Oregon

<u>0</u> <u>1</u>	DAYS EARLIER THAN	<u>1</u> <u>4</u>	} See Table 14. COMPARISON VARIETY
	MATURITY SAME AS	<u>1</u> <u>4</u>	
<u>0</u> <u>9</u>	DAYS LATER THAN	<u>1</u> <u>4</u>	

5. PLANT HEIGHT: (At maturity to top of panicle)

<u>1</u> <u>4</u> <u>8</u> <u>3</u>	mm HEIGHT		} See Table 8. COMPARISON VARIETY
<u>1</u> <u>4</u>	mm SHORTER THAN	<u>1</u> <u>4</u>	
	HEIGHT SAME AS	<u>1</u> <u>4</u>	
<u>4</u> <u>4</u>	mm TALLER THAN	<u>1</u> <u>4</u>	

6. GROWTH HABIT (Mature)

<u>2</u>	1 = ERECT (KENTUCKY 31)	2 = SEMI-ERECT (HIGHLIGHT)	3 = PROSTRATE
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7. RHIZOMES

Occasional plants show some rhizome development.

<u>1</u> <u>4</u>	mm LENGTH	<u>1</u> <u>4</u>	mm WIDTH
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<u>0</u>	0 = ABSENT	1 = WEAKLY CREEPING (DAWSON)	2 = STRONGLY CREEPING (BOREAL)	3 = OTHER _____
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8. LEAF BLADE:

<u>4</u>	COLOR:	1 = LIGHT GREEN (GOLDFROOD)	2 = MODERATELY LIGHT GREEN (HIGHLIGHT)	3 = MEDIUM GREEN (JAMESTOWN, KENTUCKY 31)	
		4 = DARK GREEN (CASCADE)	5 = BLUEGREEN	6 = GRAYGREEN	7 = OTHER (SPECIFY) <u>11</u>

8. LEAF BLADE:

☐ 0 ANTHOCYANIN: 0 = ABSENT 1 = PRESENT ☐ HAIRS (BASAL): 0 = ABSENT 1 = PRESENT ☐ 3 MARGINS: 1 = SMOOTH
2 = SEMI-ROUGH
3 = ROUGH

See Table 10.

See Table 11.

☐ 1 ☐ 6 ☐ 5 mm LENGTH (FIRST LEAF BELOW FLAG LEAF)☐ 6 ☐ 3 mm WIDTH☐ 6 ☐ 6 mm SHORTER THAN ☐ 1 ☐ 4☐ mm NARROWER THAN ☐ ☐LENGTH SAME AS ☐ ☐ COMPARISON VARIETYWIDTH SAME AS ☐ ☐ COMPARISON VARIETY☐ mm LONGER THAN ☐ ☐☐ 1 mm WIDER THAN ☐ 1 ☐ 4

9. LEAF SHEATH (Plant Base):

☐ COLOR: 1 = WHITE (HIGHLIGHT) 2 = RED ☐ 1 AURICLE HAIRINESS: 0 = ABSENT 1 = PRESENT

10. PANICLE (Mature plant)

51-inch of row

See Table 13.

☐ 0 ☐ 2 ☐ 6 NUMBER OF PANICLES PER PLANT (FIRST YEAR OF PRODUCTION - FALL OR SPRING PLANTING SPECIFY Fall)

☐ 2 ☐ 5 ☐ 0 mm LENGTH See Table 9.☐ ☐ ☐ GRAMS OF SEED PER PANICLE☐ 2 ☐ 3 mm SHORTER THAN ☐ 1 ☐ 4☐ GRAMS LESS SEED THAN ☐ ☐LENGTH SAME AS ☐ ☐ COMPARISON VARIETYWEIGHT SAME AS ☐ ☐ COMPARISON VARIETY☐ 0 ☐ 4 mm LONGER THAN ☐ 1 ☐ 2☐ GRAMS MORE SEED THAN ☐ ☐

☐ SHAPE: 1 = NARROW-TAPERING 2 = EGG SHAPE 3 = OBLONG 4 = OTHER (SPECIFY) _____

☐ 1 TYPE: 1 = OPEN 2 = INTERMEDIATE 3 = COMPACT

☐ 2 HABIT: 1 = ERECT 2 = NODDING

☐ BRANCHES: 1 = SMOOTH 2 = ROUGH

☐ 2 COLOR (At 50% flowering): 1 = YELLOWISH GREEN 2 = GREEN 3 = BLUISH GREEN 4 = PURPLISH 5 = REDDISH
6 = OTHER (SPECIFY) _____

11. PALEA:

☐ 0 *gg 3/12/81* HAIRS (ON KEELS): 0 = ABSENT 1 = SHORT (OLDS) 2 = LONG (RAINIER)

12. LEMMA:

☐ 0 *gg 3/12/81* HAIRS: 0 = ABSENT 1 = PRESENT *Lemma scabra or irregular scattered short hispid with minute teeth mainly on nerves*

☐ 2 TEXTURE: 1 = SMOOTH 2 = ROUGH☐ mm LEMMA LENGTH☐ mm LEMMA WIDTH☐ mm SHORTER THAN ☐ ☐☐ mm NARROWER THAN ☐ ☐LENGTH SAME AS ☐ ☐ COMPARISON VARIETYWIDTH SAME AS ☐ ☐ COMPARISON VARIETY☐ mm LONGER THAN ☐ ☐☐ mm WIDER THAN ☐ ☐

☐ 1 *gg 3/12/81* AWNS: 0 = ABSENT 1 = PRESENT

☐ mm AWN LENGTH

12. LEMMA:

<input type="text" value="1"/>	<input type="text" value="1"/>	mm SHORTER THAN	<input type="text" value="1"/>	<input type="text" value="1"/>	} COMPARISON VARIETY
<input type="text" value="1"/>	<input type="text" value="1"/>	LENGTH SAME AS	<input type="text" value="1"/>	<input type="text" value="1"/>	
<input type="text" value="1"/>	<input type="text" value="1"/>	mm LONGER THAN	<input type="text" value="1"/>	<input type="text" value="1"/>	

13. SEED:

gg all of this section 3/12/81

<input type="text" value="6"/>	<input type="text" value="4"/>	<input type="text" value="7"/>	mm LENGTH	<input type="text" value="1"/>	<input type="text" value="4"/>	mm WIDTH
<input type="text" value="1"/>	<input type="text" value="2"/>	<input type="text" value="7"/>	mm SHORTER THAN	<input type="text" value="1"/>	<input type="text" value="2"/>	} COMPARISON VARIETY
<input type="text" value="1"/>	<input type="text" value="2"/>	<input type="text" value="7"/>	LENGTH SAME AS	<input type="text" value="1"/>	<input type="text" value="2"/>	
<input type="text" value="0"/>	<input type="text" value="4"/>	<input type="text" value="3"/>	mm LONGER THAN	<input type="text" value="1"/>	<input type="text" value="4"/>	
<input type="text" value="0"/>	<input type="text" value="1"/>	<input type="text" value="1"/>	mm. NARROWER THAN	<input type="text" value="1"/>	<input type="text" value="2"/>	} COMPARISON VARIETY
<input type="text" value="0"/>	<input type="text" value="1"/>	<input type="text" value="1"/>	WIDTH SAME AS	<input type="text" value="1"/>	<input type="text" value="2"/>	
<input type="text" value="0"/>	<input type="text" value="1"/>	<input type="text" value="1"/>	mm WIDER THAN	<input type="text" value="1"/>	<input type="text" value="4"/>	
<input type="text" value="2"/>	<input type="text" value="3"/>	<input type="text" value="2"/>	<input type="text" value="7"/>	GRAMS PER 1000 SEED		
<input type="text" value="0"/>	<input type="text" value="3"/>	<input type="text" value="8"/>	<input type="text" value="6"/>	GRAMS LESS THAN	<input type="text" value="1"/>	<input type="text" value="1"/>
<input type="text" value="0"/>	<input type="text" value="3"/>	<input type="text" value="8"/>	<input type="text" value="6"/>	WEIGHT SAME AS	<input type="text" value="1"/>	<input type="text" value="1"/>
<input type="text" value="0"/>	<input type="text" value="4"/>	<input type="text" value="9"/>	<input type="text" value="3"/>	GRAMS MORE THAN	<input type="text" value="1"/>	<input type="text" value="4"/>

14. DISEASE, INSECT, AND NEMATODE (0 = Not Tested, 1 = Susceptible, 2 = Resistant):

<input type="text" value="0"/> <u>HELMINTHOSPORIUM VAGANS</u>	<input type="text" value="0"/> <u>H. SOROKINIANUM</u>	<input type="text" value="2"/> <u>H. DICTYOIDES (Moderately)</u>
<input type="text" value="2"/> <u>RHIZOCTONIA SOLAN (Moderately)</u>	<input type="text" value="2"/> <u>ERYSIPHE GRAMINIS</u>	<input type="text" value="2"/> <u>USTILAGO STRIIFORMIS</u>
<input type="text" value="0"/> <u>FUSARIUM NIVALE</u>	<input type="text" value="0"/> <u>F. ROSEUM</u>	<input type="text" value="0"/> <u>TYPHULA IOTANA</u>
<input type="text" value="0"/> <u>PUCCINIA GRAMINIS</u>	<input type="text" value="0"/> <u>P. STRIIFORMIS</u>	<input type="text" value="0"/> <u>P. POAE-NEMORALIS</u>
<input type="text" value="0"/> <u>P. CORONATA</u>	<input type="text" value="1"/> <u>PYTHIUM ULTIMUM</u>	<input type="text" value="0"/> <u>CORTICIUM FUSCIFORME</u>
<input type="text" value="2"/> <u>SCLEROTINIA HOMEOCARPA</u>	<input type="text" value="0"/> INSECT _____	<input type="text" value="0"/> NEMATODE _____
<input type="text" value="0"/> OTHER _____	<input type="text" value="0"/> OTHER _____	<input type="text" value="0"/> OTHER _____

15. GIVE VARIETY OR VARIETIES THAT MOST CLOSELY RESEMBLE THE APPLICATION VARIETY. For the following characteristics indicate degree of resemblance (D.R.) by placing in the column marked, D.R., one of the following numbers:

1 = Application variety is less than comparison variety

2 = Same as

3 = More than, better, greater, darker, more disease resistant, etc.

CHARACTER	VARIETY	D.R.	CHARACTER	VARIETY	D.R.
RHIZOME LENGTH	Falcon	2	GROWTH HABIT	Falcon	2
LEAF WIDTH	Falcon	2	LEAF COLOR	Falcon	2
PANICLE COLOR			PANICLE SHAPE		
WINTER COLOR			COLD INJURY		
SHADE TOLERANCE	Falcon gg all	3	HEAT		
DROUGHT	3/12/81		DISEASE*		
			Brown Patch	Falcon	2

*Specify each disease evaluated.

STATE OF)
) SS.:
COUNTY OF)

R#0185253.01

The Company hereby further acknowledges and affirms that the rights and remedies of the Lender with respect to the security interest in and lien upon the Company's rights in the Agricultural Intellectual Property Collateral made and granted hereby are more fully set forth in the Loan Agreement, the terms and provisions of which are hereby incorporated herein by reference as if fully set forth herein.

Further, by this Security Agreement, the Company agrees to assign to Lender, upon the occurrence of an Event of Default by the Company (as defined in the Loan Agreement), all of the Company's rights in and to the Agricultural Intellectual Property Collateral; provided that this assignment is expressly contingent upon the occurrence of an Event of Default.

This Security Agreement will become effective June 28, 1996 at the Effective Time of the Merger of Budd Acquisition, Inc., a New Jersey corporation, with and into Lofts Seed Inc., a New Jersey corporation, as provided in a Certificate of Merger to be filed with the New Jersey Secretary of State's office.

IN WITNESS WHEREOF, the Company has caused this Security Agreement to be duly executed by its authorized officer of agent as of June 28, 1996.

LOFTS SEED INC.

[Corporate Seal]

By: Richard P. Budd

Name:

Title: CEO

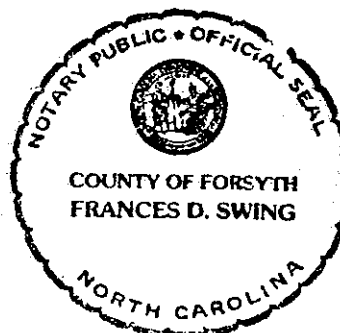
On JUNE 28, 1996, RICHARD P. BUDD personally came before me, FRANCES D. SWING, a Notary Public for said County and State, RICHARD P. BUDD who being by me duly sworn, says that he is CEO of Lofts Seed Inc., and that said writing was signed and sealed by him on behalf of said corporation by its authority duly given. The said RICHARD P. BUDD acknowledged the said writing to be the act and deed of the corporation.

WITNESS my hand and notarial seal.

Frances D. Swing
Notary Public

My Commission Expires: 2-9-97

Dated this 28th day of June 1996.



SCHEDULE A
AGRICULTURAL INTELLECTUAL PROPERTY COLLATERAL
(CERTIFICATES OF PLANT VARIETY PROTECTION)

A. KENTUCKY BLUEGRASS

VARIETY NAME	NUMBER	DATE APPLIED	DATE ISSUED	EXPIRES
Princeton P105	9600228	4-22-96	Pending	
Eagleton	9600277	6-11-96	Pending	
Preakness	9500090	2-13-95	Pending	
Mystic	8100157	8-26-81	5-27-82	5-27-00
Georgetown	8200187	1982	7-24-83	7-21-01
Lofts 1757	8800230	1988	9-30-92	9-30-10
Laser (Rough Bluegrass)	8900288	1989	10-31-91	10-31-09
Co-owned PVPs				
243 (Nassau)*	8400005	1983	12-21-84	12-21-02
Suffolk*	8800072	1988	5-31-88	5-31-06
Ram I**	7800069	1978	3-15-79	3-15-96

* Jacklin Seed Company listed as co-owner

** Mrs. Barbara B. Curtis listed as co-owner

B. PERENNIAL RYEGRASS

VARIETY NAME	NUMBER	DATE APPLIED	DATE ISSUED	EXPIRES
Palmer	8200178	9-8-82	5-31-84	5-31-02
Palmer II	9200209	6-16-92	Pending	
Prelude	8200177	9-8-82	5-31-84	5-31-02
Prelude II	9200210	6-16-92	Pending	
Yorktown III	9200212	6-16-92	Pending	

VARIETY NAME	NUMBER	DATE APPLIED	DATE ISSUED	EXPIRES
Repell	8400148	8-30-84	11-29-85	11-29-03
Yorktown II	7800001	10-6-77	5-1-80	5-1-97
Repell II	9200211	6-16-92	Pending	

C. TALL FESCUE

VARIETY NAME	NUMBER	DATE APPLIED	DATE ISSUED	EXPIRES
Rebel	8000153	8-21-80	5-14-81	5-14-99
Rebel III	9500129	4-10-95	Pending	
Rebel Jr.	9000240	1990	11-30-92	11-30-10
Rebel 3D	9300200	4-21-93	Pending	
Tribute	8800235	9-15-88	2-28-90	2-28-08
Clemfine	8200175	9-7-82	2-28-83	2-28-01
Rebel II	8700195	1987	1-15-88	1-15-06

D. FINE FESCUE

VARIETY NAME	NUMBER	DATE APPLIED	DATE ISSUED	EXPIRES
Reliant	8200168	1982	2-28-83	2-28-01
Jamestown II	9100254	1991	8-31-95	8-31-15

E. BENTGRASS

VARIETY NAME	NUMBER	DATE APPLIED	DATE ISSUED	EXPIRES
L93	9600256	5-8-96	Pending	
Southshore	9200256	1992	10-31-94	10-31-12

F. OTHER

VARIETY NAME	NUMBER	DATE APPLIED	DATE ISSUED	EXPIRES
Salty (weeping alkaligrass)	9500128	4-10-95	Pending	
Laser II (rough bluegrass)	9500238	6-15-95	Pending	

FILED

JAN 14 1998

**LONNA R. HOOKS
SECRETARY OF STATE**

**CERTIFICATE OF MERGER OF
LOFTS SEED, INC. INTO
LOFTS MERGERCO, INC.**

To: The Secretary of State
State of New Jersey

Pursuant to the provisions of Section 14A:10-7 Corporations, General, of the New Jersey Statutes, the undersigned corporations hereby execute the following Certificate of Merger.

ARTICLE ONE

The names of the corporations proposing to merge and the states under the laws of which such corporations are organized, are as follows:

Name of Corporation

State of Incorporation

Lofts Seed, Inc.

New Jersey

Lofts Mergerco, Inc.

Nevada

ARTICLE TWO

The laws of the State of Nevada, the state under which such foreign corporation is organized, permit such merger and the applicable provisions of the laws of said jurisdiction have been, or upon compliance with filing and recording requirements will have been, complied with.

ARTICLE THREE

The name of the surviving corporation shall be Lofts Mergerco, Inc. and it shall be governed by the laws of the State of Nevada.

The address of the surviving corporation's registered office is 2700 Sunset Rd., Las Vegas, Nevada 89120 and the name of the registered agent at such address is Johnny Thomas.

ARTICLE FOUR

The following plan of Merger was approved by the shareholders of the undersigned domestic corporation in the manner prescribed by the New Jersey Business Corporation Act, and was approved by the undersigned foreign corporation in the manner prescribed by the laws of the State under which it is organized:

0100 731429

EXECUTED February 1, 1979
STATE OF NEW JERSEY

Cyril R. Funk, Jr.
CYRIL R. FUNK, JR.

COUNTY OF MIDDLESEX

Before me a Notary Public for said County, personally appeared C. R. Funk, Jr. known to me to be the person who executed and acknowledged it to be his free act and deed.

WITNESS My hand and seal February 1, 1979

Aida Bianchi
NOTARY PUBLIC

Commission expires March 29, 1982

EXECUTED Feb. 26, 1979
STATE OF NEW JERSEY

Richard H. Hurley
RICHARD H. HURLEY

COUNTY OF HUNTERDON

Before me a Notary Public for said County, personally appeared Richard Hurley known to me to be the person who executed and acknowledged it to be his free act and deed.

WITNESS my hand and seal this 26th day of Feb 1979

Dorothy P. McLaughlin
NOTARY PUBLIC
MAY 4, 1983

Commission expires MAY 4, 1983

FILED
IN THE OFFICE OF THE
SECRETARY OF STATE OF THE
STATE OF NEVADA

JAN 26 1998

26394-92

John Hill
JOHN HILL, SECRETARY OF STATE

CERTIFICATE OF AMENDMENT OF

ARTICLES OF INCORPORATION OF

LOFTS MERGERCO, INC.

Pursuant to the provisions of Nevada Revised Statutes, Title 7, Chapter 78, the undersigned officers do hereby certify:

FIRST: The name of the Corporation is Loftis Mergerco, Inc.

SECOND: The Board of Directors of the Corporation duly adopted the following resolutions on January 12, 1998:

RESOLVED, that it is advisable in the judgment of the Board of Directors of the Corporation that the name of the Corporation be changed, and that, in order to accomplish the same, Article FIRST of the Articles of Incorporation be amended to read as follows:

"FIRST: The name of the corporation (hereinafter called the Corporation) is Loftis Seed Company, Inc."

FURTHER RESOLVED, that a special meeting of the sole stockholder having voting power be and it is hereby called and that notice be given in the manner prescribed by the By-laws of the Corporation and by Nevada Revised Statutes, Title 7, Chapter 78, unless the said stockholder shall waive the notice of meeting in writing or unless the said stockholder shall dispense with the holding of a meeting and shall take action upon the proposed amendment by a consent in writing signed by the sole stockholder, and

FURTHER RESOLVED, that in the event that the said stockholder shall adopt the aforesaid proposed amendment by a vote in favor thereof by at least a majority of the voting power or by a written consent in favor thereof signed by the sole stockholder without a meeting, the Corporation is hereby authorized to make by the hands of its President or a Vice President and by its Secretary or an Assistant Secretary a certificate setting forth the said amendment and to cause the same to be filed pursuant to the provisions of Nevada Revised Statutes, Title 7, Chapter 78.

RECORDATION FORM COVER SHEET
PVP CERTIFICATES ONLY

To the Acting Commissioner of the Plant Variety Protection Office. Please record the attached original documents or copy thereof.

1. Name of conveying party(ies):

LOFTS SEED COMPANY, INC.

- ☐ Individual(s) ☐ Association
☐ General Partnership ☐ Limited Partnership
☒ Corporation - State Nevada
☐ Other _____

Additional name(s) of conveying party(ies) attached? ☐ Yes ☒ No

3. Nature of conveyance:

- ☐ Assignment ☐ Merger
☒ Security Agreement ☐ Change of Name
☐ Other _____

Execution Date: June 23, 1998

2. Name and address of receiving party(ies):

Name: **BANKAMERICA BUSINESS CREDIT, INC.**

Street Address: 55 South Lake Avenue, Suite 900

City: Pasadena State: California

ZIP: 91101

- ☐ Individual(s) citizenship _____
☐ Association _____
☐ General Partnership _____
☐ Limited Partnership _____
☒ Corporation-State Delaware
☐ Other _____

If assignee is not domiciled in the United States, a domestic representative designation is attached: ☐ Yes ☐ No
(Designation must be a separate document from Assignment)
Additional name(s) & address(es) attached? ☐ Yes ☒ No

4. PVP certificate identifying information:

A. PVP No.: **8000153**

B. Date certificate issued or application filed: **05/14/81**

C. Variety: **"REBEL" Fescue, Tall**

Additional numbers attached? ☐ Yes ☒ No

5. Name and address of party to whom correspondence concerning document should be mailed:

Name: Tamsen Valoir
Jenkins & Gilchrist

Internal Address: _____

Street Address: 1445 Ross Avenue,
Suite 3200

City: Dallas State: Texas Zip: 75202-2799

6. Total number of PVP applications or certificates involved: **1**

7. Total fee (37 CFR 3.41): \$ 25.00

- ☒ Enclosed
☐ Authorized to be charged to deposit account.

8. Deposit Account number: _____

(Attach duplicate copy of this page if paying by deposit account)

DO NOT USE THIS SPACE

9. Statement and signature.

To the best of my knowledge and belief, the foregoing information is true and correct and any attached copy is a true copy of the original document.

Tamsen Valoir

Name of Person Signing

Signature

June 30, 1998

Date

Total number of pages comprising cover sheet:

1

PVP CERTIFICATE ASSIGNMENT

WHEREAS, LOFTS SEED COMPANY, INC., a Nevada corporation ("Assignor"), having a business address of 191 Budd Blvd., Winston Salem, NC 27114, is the owner of the pending or issued Plant Protection Act (PVP) certificate(s) listed below; and

WHEREAS, BankAmerica Business Credit, Inc., a Delaware corporation, having an office at 55 South Lake Avenue, Suite 900, Pasadena, California 91101 as "Agent" for the "Lenders" as defined and described in the Loan and Security Agreement dated as of June 23, 1998 ("Assignee"), is desirous of acquiring a SECURITY INTEREST in such PVP certificate(s);

NOW, THEREFORE, for good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, said Assignor does hereby sell, assign, transfer and set over unto the said Assignee a SECURITY INTEREST in, to, and under the PVP certificate(s):

No. 9600256	Pending
No. 9200256	Issued
No. 9500090	Pending
No. 9600228	Pending
No. 9600277	Pending
No. 8100157	Issued
No. 8200187	Issued
No. 8800230	Issued
No. 9500238	Pending
No. 8900288	Issued
No. 9300200	Pending
No. 9500129	Pending
No. 8000153	Issued
No. 8200175	Issued
No. 8700195	Issued
No. 8800235	Issued
No. 9000240	Issued
No. 9200209	Pending
No. 9200210	Pending
No. 9200211	Pending
No. 9200212	Pending
No. 8200177	Issued
No. 8200178	Issued
No. 8400148	Issued
No. 8200168	Issued
No. 9100254	Issued
No. 9500128	Issued

LOFTS SEED COMPANY, INC.

By: _____

Printed Name: Henry A. Ingalls

Title: Vice President

STATE OF TEXAS

§

§

COUNTY OF DALLAS

§

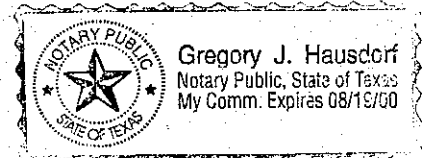
Henry A. Ingalls, Vice President, of LOFTS SEED COMPANY, INC., personally appeared before me, and being first duly sworn declared that he signed the security agreement in the capacity designated, and further states that he has read the above security agreement, and the statements therein contained are true.

SUBSCRIBED AND SWORN TO before me this 23 day of June, 1998.

Notary Public in and for the State of Texas

My Commission Expires: _____

Printed Name



UNITED STATES DEPARTMENT OF AGRICULTURE
PLANT VARIETY PROTECTION OFFICE

CERTIFICATE OF MAILING

BOX ASSIGNMENT

Acting Commissioner of the Plant Variety Protection Office
Plant Variety Protection Office
10301 Baltimore Blvd.
Beltsville, MD 20705-2351.

Dear Sir:

I hereby certify that this correspondence,

74 Cover sheets

74 Assignments

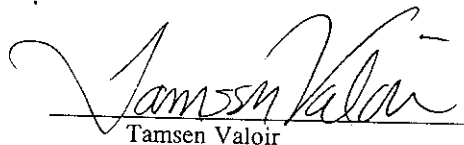
Check in the amount of \$1,850.00 (74 x \$25.00)

74 Return postcards

for the attached (in Exhibit A) PVP certificate numbers are being deposited with the United States Postal Service as Express Mail, mailing label number EE507465254US, postage prepaid, in an envelope addressed to:

BOX ASSIGNMENT

Acting Commissioner of the Plant Variety Protection Office
Plant Variety Protection Office
10301 Baltimore Blvd.
Beltsville, MD 20705-2351.


Tamsen Valoir

Date: July 1, 1998

IPHO:15412.1 20992-00039

Jenkins & Gilchrist

A PROFESSIONAL CORPORATION
1100 LOUISIANA STREET, SUITE 1800
HOUSTON, TEXAS 77002

TEXAS COMMERCE BANK, N.A.
301 W. BEAUREGARD
SAN ANGELO, TEXAS 76903

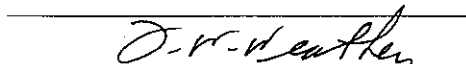
903870

DATE	AMOUNT
July 1, 1998	*\$1,850.00*

AY *One Thousand Fifty Dollars and 00 Cents*

TO THE
ORDER
OF

U. S. Department Of Agriculture
Plant Variety Protection Office



TWO SIGNATURES REQUIRED OVER \$2500
VOID AFTER 180 DAYS
NOT VALID FOR OVER \$5000

⑈0903870⑈ ⑆1111300880⑆ ⑈06300009654⑈